Sure Stand AG Seeder
Models SS16 and SSP16
Operator’s Manual
# Manuals for Sure Stand AG Seeder

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5 General Reference and Specifications
Introduction
The implement described in this manual has been designed with care and built by skilled workers using quality materials and processes. Proper assembly and maintenance will provide you with satisfactory use for seasons to come.

DANGER
Read this entire manual before attempting to assemble, adjust or operate this implement. Failure to comply with this warning can result in personal injury or death, damage to the implement or its components and inferior operation.

Description of Unit
The Sure Stand concept provides precision seed metering and accurate seed depth placement. This combination offers optimum germination. Units are offered in three-point hitch or pull type.

Using this Manual
This manual will familiarize you with safety, assembly, operation, adjustment, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.

• The information in this manual is current at time of printing. Some parts may have changed to assure top performance.
• Location reference: Right and Left designations in this manual are determined by facing the direction the implement will travel during field operation, unless otherwise stated.

Owner Assistance
If customer service or repairs are needed, contact your Brillion dealer. They have trained personnel, parts and service equipment specially designed for Brillion products. Your implement’s parts should only be replaced with Brillion parts. If items covered in this manual are not understood, contact your local Brillion Dealer.

Warranty Registration
Brillion Farm Equipment, by Landoll, shall have no warranty obligation unless each product is registered within 10 days of retail purchase, using the Landoll Company, LLC Ag Products on-line registration process. Please refer to the Ag Products Policy and Procedures Manual, accessible at www.landoll.com for step by step instructions regarding product registration.

Enter your product information below for quick reference.

MODEL NUMBER

SERIAL NUMBER

DATE OF PURCHASE

Refer to the ID plate as shown. See Figure 1-1.

Figure 1-1: ID Plate
INTRODUCTION AND SAFETY INFORMATION

Safety

NOTE
Investigation has shown that nearly 1/3 of all farm accidents are caused by careless use of machinery. Insist that all people working with you or for you abide by all safety instructions.

Understanding Safety Statements

You will find various types of safety information on the following pages and on the implement decals (signs) attached to the implement. This section explains their meaning.

NOTICE
Special notice - read and thoroughly understand.

CAUTION
Proceed with caution. Failure to heed caution may cause injury to person or damage product.

WARNING
Proceed with caution. Failure to heed warning will cause injury to person or damage product.

DANGER
Proceed with extreme caution. Failure to heed notice will cause injury or death to person and/or damage product.

NOTE
You should read and understand the information contained in this manual and on the implement decals before you attempt to operate or maintain this equipment. Examine safety decals and be sure you have the correct safety decals for the implement. See Figure 1-4. Order replacement decals through your Brillion dealer.

Keep these signs clean so they can be observed readily. It is important to keep these decals cleaned more frequently than the implement. Wash with soap and water or a cleaning solution as required.

Replace decals that become damaged or lost. Also, be sure that any new implement components installed during repair include decals which are assigned to them by the manufacturer.

When applying decals to the implement, be sure to clean the surface to remove any dirt or residue. Where possible, sign placement should protect the sign from abrasion, damage, or obstruction from mud, dirt, oil etc.

Keep Riders Off of Machinery

DANGER
• Do not allow anyone to ride on the tractor or implement. Riders could be struck by foreign objects or thrown from the implement.
• Never allow children to operate equipment.
• Keep bystanders away from implement during operation.

Transporting Safety

IMPORTANT
It is the responsibility of the owner/operator to comply with all state and local laws.

When transporting the implement on a road or highway, use adequate warning symbols, reflectors, lights and slow moving vehicle sign as required. Slow moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.

Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of the towing vehicle.

Carry reflectors or flags to mark the tractor and implement in case of breakdown on the road.

Do not transport at speeds over 20 MPH under good conditions. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.

Avoid sudden stops or turns because the weight of the implement may cause the operator to lose control of the tractor. Use a tractor 1.5 times heavier than the implement.

Use caution when towing behind articulated steering tractors; fast or sharp turns may cause the implement to shift sideways.

Keep clear of overhead power lines and other obstructions when transporting. Know the transport height and width of your implement. See Figure 5-1.
**ATTACHING, DETACHING AND STORAGE**

1. Do not stand between the tractor and implement when attaching or detaching implement unless both are not moving.
2. Before applying pressure to the hydraulic system, be sure all connections are tight and that hydraulic lines and hoses are not damaged.
3. Lower implement to ground when not in use.
4. Block implement so it will not roll when unhitched from the tractor.
5. Relieve pressure in hydraulic lines before uncoupling hydraulic hoses from tractor.

**NOTE**

To relieve hydraulic pressure: Depending on tractor hydraulic system, some can be relieved by actuating control lever after engine is stopped. If tractor has electric over hydraulic controls, it may be necessary to move the control lever to the float position. Refer to tractor's operator's manual.

Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

**MAINTENANCE SAFETY**

1. Block the implement so it will not roll when working on or under it to prevent injury.
2. Transport Locks installed.
3. Do not make adjustments or lubricate the machine while it is in motion.
4. Make sure all moving parts have stopped.
5. Understand the procedure before doing the work. Use proper tools and equipment.

**PROTECTIVE EQUIPMENT**

1. Wear protective clothing & equipment appropriate for the job. Avoid loose fitting clothing.
2. Because prolonged exposure to loud noise can cause hearing impairment or hearing loss, wear suitable hearing protection, such as earmuffs or earplugs.

**TIRE SAFETY**

Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.

1. When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side, not in front of or over the tire assembly. Use a safety cage if available.

2. When removing and installing wheels use wheel-handling equipment adequate for the weight involved.

**CHEMICAL SAFETY**

Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil & property.

1. Read chemical manufactures instructions and store or dispose of unused chemicals as specified. Handle chemicals with care & avoid inhaling smoke from any type of chemical fire.
2. Store or dispose of unused chemicals as specified by the chemical manufacturer.

**PREPARE FOR EMERGENCIES**

1. Keep a First Aid Kit and Fire Extinguisher handy
2. Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.

**HIGH PRESSURE FLUID SAFETY**

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than hands, to search for suspected leaks.

Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Avoid the hazard by relieving pressure before disconnecting hydraulic lines.

**NOTE**

Relieve hydraulic pressure by shifting the control valve lever to float.

Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
Safety Chain

1. Use a safety chain to help control drawn machinery should it separate from the tractor drawbar.

2. Use a chain with a strength rating equal to or greater than the gross weight of towed machinery, in accordance with ASAE S338.2 specifications. If two or more machines are pulled in tandem, a larger chain may be required. Chain capacity must be greater than the total weight of all towed implements.

3. A second chain should be used between each implement.

4. Attach the chain to the tractor drawbar support or specified anchor location. Never attach the chain to an intermediate support. Allow only enough slack in the chain to permit turning. The distance from hitch pin to attachment point or intermediate support point should not exceed 9 inches. If the distance from the drawbar pin to either the front or rear chain attachment point exceeds 9 inches, intermediate chain support is required.

5. Replace chain if any links or end fittings are broken, stretched or damaged.

6. Do not use a safety chain for towing.
Decals

ITEM 1
170509

ITEM 2
218260

ITEM 3
9K788

ITEM 4
528934

ITEM 5
2K123

ITEM 6
192069

ITEM 7
218265

ITEM 8
528933

ITEM 10
218264

ITEM 9
528938

Figure 1-4: Decals
Figure 1-5: Decal Locations, SS16 Front and Back Views (1 of 2)
Figure 1-6: Decal Locations, SS16 Side Views (2 of 2)
Figure 1-7: Decal Locations, SSP16 Front and Back (1 of 2)
Figure 1-8: Decal Locations, SSP16 Side Views (2 of 2)
INTRODUCTION AND SAFETY INFORMATION

Table provided for general use.

NOTES:
Chapter 2
Assembly

**CAUTION**
Do not work on or under this machine unless securely blocked and supported by a hoist or tractor or by other sufficient means.

**WARNING**
Do not attempt to lift heavy parts manually. Use a hoist or a fork lift to move these parts into position.

**NOTE**
Refer to the repair parts manual F-1020 for identification of parts and for the approximate relationship of the parts in assembly.

To ensure alignment of assemblies, **leave the nuts loose until completion** of final assembly. Use lock washers or flat washers as specified. Spread all cotter pins.

**IMPORTANT**
All harnesses must be firmly attached to machine frame members, or nylon tubing, so they don’t sag or become torn loose by field debris. Use the tie straps provided.

Check to be sure the harnesses at center of machine is slack enough so as not to be stretched or interfered with while rotating frame from transport to field working position and vice versa.

**NOTE**
After completion of final assembly, tighten all nuts evenly to prevent misalignment, distortion or binding. Tighten all screws and nuts to the recommended torques.

**IMPORTANT**
- If pre-assembled parts or fasteners are temporarily removed, remember where they go. It is best to keep parts separated.
- Check that all working parts move freely, bolts are tight and cotter pins spread.
- Refer to the Torque Table for proper torque values. Note the different torque requirements for bolts with lock nuts. **See Page 4-1.**

“Left” and “Right” refer to directions seen as if standing behind the machine and facing in the direction of forward travel.
Drawbar Installation

**WARNING**

Do not attempt to lift heavy parts manually. Use a hoist or a fork lift to move these parts into position.

1. Center the Drawbar Assembly on Seeder Frame and attach using six 3/4-10 U-Bolts, Flat Washers and Locknuts. Tighten. **See Figure 2-1.**
2. Install Toolbox to Drawbar cross member using two 3/8-16 x 1 Bolts, Flat Washers and Flanged Locknuts.
3. Attach Air Manifold Assembly to the Drawbar cross member using one 5/8-11 x 1-3/4 Bolt, Flat Washer and Flanged Locknut.
4. Attach the Manual Holder to the Drawbar using two 1/4-20 x 1 Bolts, Flat Washers and Locknuts.
5. Install Hose Support to the Drawbar using one 5/8-11 x 2 Bolt, Flat Washer and Flanged Locknut.
6. Place Wrenches and Calibration Crank in Toolbox.

---

**Figure 2-1: Drawbar Installation**
Wheel Arm Installation

1. Position Wheel Arm Assembly into the Wheel Arm Bracket. See Figure 2-2.
2. Position a 3/4 Thrust Washer on each side of the Wheel Arm Assembly and insert Step Pin.
3. Attach Step Pin to Wheel Arm Bracket with 1/2-13 x 2 Bolt and Locknut. Secure Step Pin with 1-1/4 x 2-1/2 x 1/2 Washer, Slotted Nut and 1/4 x 2-1/2 Cotter Pin.
4. Install 3 x 8 Hydraulic Cylinder to the Wheel Arm Bracket, by sliding a 1 x 2 11ga SS Washer over 1 x 8-3/4 Pin and insert into Wheel Arm Bracket and Hydraulic Cylinder Base End. Slide a SS Washer over end of Pin and secure with Cotter Pin.
5. Mount the Tire and Wheel Assembly to the Wheel Arm Assembly, secure with 9/16-18 Wheel Nuts. (See “Tires” on page 4-3.)
3Pt Hitch Installation

1. Attach the 3Pt Hitch to the Seeder Frame with 3/4-10 U-Bolts, Flat Washers and Locknuts. Tighten. See Figure 2-3.

2. Attach the Air Manifold Bracket Assembly to the 3Pt Hitch using two 3/8 x 16 x 5-1/4 Bolts, and Flanged Locknuts. **Do Not** tighten until harnesses are installed.

3. Attach the Toolbox to the 3Pt Hitch using two 3/8-16 x 1 Bolts, Flat Washers and Flanged Locknuts.

4. Insert Top Link and lower 3Pt Pins. Secure with 7/16 Lynch Pins.

Figure 2-3: 3 Pt Hitch (1 of 2)
5. Attach the Manual Holder to the 3Pt Hitch using two 1/4-20 x 1 Bolts, Flat Washers and Locknuts.

6. Attach the Connector Holder to the Air Manifold Bracket Assembly using two 1/4-20 x 3/4 Bolts, Flat Washers and Locknuts.

7. Place the Calibration Crank and Wrenches in the Toolbox. **See Figure 2-4.**
Drawbar Air System Installation

1. Cut the nylon tubing into two equal lengths, approximately 15ft each. Set aside.
2. Screw the coated threaded male end of the Push to Connect Elbow into each air springs port. Insert a nylon tube end into each Push to Connect Elbow.
3. Route the nylon tubing along the left and right sides of frame and up the Drawbar to the Air Manifold. See Figure 2-5.
4. Cut off any excess nylon tubing and insert ends into the Air Manifold Assembly Push to Connect Elbows. Cut ends of Nylon Tubing should be smooth and burr free. Burrs can cause slow leaks.
5. Secure nylon tubing with tie straps after all Harnesses and Hydraulic Hoses have been installed.
6. When Assembly is complete, pressurize the Rear Roller Air System. (See “Rear Roller Air System” on page 3-7.)
3Pt Hitch Air System Installation

1. Cut the nylon tubing into two equal lengths, approximately 15ft each. Set aside.

2. Screw the coated threaded end of the male elbow into the air springs opening. Insert hose ends into the Push to Connect male elbow.

3. Route the nylon tubing along the left and right sides of frame and up the 3Pt Hitch. See Figure 2-6.

4. Cut off any excess nylon tubing and insert nylon tubing ends into the Push to Connect male elbows located on the Air Manifold Assembly. Cut ends of Nylon Tubing should be smooth and burr free. Burrs can cause slow leaks.

5. Secure Nylon Tubing with tie straps after all Harnesses have been installed.

6. When Assembly is complete, pressurize the Rear Roller Air System. (See “Rear Roller Air System” on page 3-7.)
Hydraulic Lift Circuit

1. Install the SMV Bracket to the Frame Bracket with 5/16-18 x 1 Bolts, Flat Washers and Locknuts. See Figure 2-7.
2. Install Bulkhead Tees into SMV Bracket using supplied hardware.
3. Install Elbow Restrictor into base end of each 3 x 8 Hydraulic Cylinder. See Figure 2-8.
4. Install Elbow Fitting into rod end of each 3 x 8 Hydraulic Cylinder.
5. Attach a 3/8 x 53 Hose to each Cylinder Base End Elbow Restrictor and a 3/8 x 64 Hose to each Cylinder Rod End Elbow.
6. Route the hoses along frame to Bulkhead Bracket and attach to Bulkhead Tees.
7. Connect 3/8 x 214 Hoses to Bulkhead Tees, route the hoses up the Drawbar.
8. Install 08MJ x 08MOR Adapter and Male Coupler into each hose end.

Figure 2-7: Hydraulic Layout
Figure 2-8: Hydraulic Schematic
**Drawbar Model LED Warning Lamps Installation**

Amber Lamps are assembled to the outer extremity of machine.

1. With the Warning Lamp Bracket bends inward, mount a Warning Lamp Bracket to the inside of each end Frame Bracket with 1/4-20 x 1 Bolts and Locknuts. **See Figure 2-9.**
2. Unscrew Amber Lamp Jam Nut if not already removed from Lamp Stud so that the Nut and Washers fall down to the plug. Place an Amber Lamp inside a Lamp Shield so that the Lamps threaded stud sits in the radius of the slot and insert the stud into each Warning Lamp Bracket slot. Secure Amber Lamps with Jam Nut and Washers.
3. Secure Lamp Shields onto Warning Lamp Brackets with 1/4-20 x 1 Bolts and Locknuts.
4. Attach Lamp Shields to the Wheel Arm Shields with 1/4-20 x 1 Bolts and Locknuts.
5. Red Lamps are assembled to the Wheel Arm Shields. Install the Red Lamps inside the Lamp Shields by sliding the lamp stud into the slot. Secure Red Lamps with Jam Nut and Washers.
6. Attach the Flasher Control Module onto the inner Drawbar Bracket using two 1/4-20 X 1-1/2 Bolts, Flat Washers and Locknuts.

**IMPORTANT**

Cables are marked Left or Yellow / Right or Green.

7. Lay out the LED Lamp Harness and attach the harness to the Flasher Control Module.
8. Route the left and right 3 plug cable along the frame and connect to each Red LED Lamp.
9. Route the remaining left and right 2 plug cables along the left and right of the frame and under the Seedbox Supports, connect into each Amber LED Lamp.
10. Lay out the 7 Pin Harness and attach the harness to the Light Module.
11. Attach SMV Sign to SMV Mount Bracket with two 5/16-18 x 1 Bolts, Flat Washers and Locknuts.
12. Route the 7 Pin Harness through the Hose Support and up the Drawbar.
13. Bundle and secure with tie wraps after Nylon Tubing, all Harnesses and Hydraulic Hoses have been installed.

**IMPORTANT**

All harnesses must be firmly attached to machine frame members, or nylon tubing, so they don't sag or become torn loose by field debris. Use the tie wraps provided.

Check to be sure the harnesses at center of machine is slack enough so as not to be stretched or interfered with while rotating frame from transport to field working position and vice versa.

**NOTE**

The 7 Pin harness connects to the tractor socket when in use. When not in use, it can be stored in the Plug Holder Cut Outs on the left front side of the Drawbar. Allow enough harness length to reach tractor socket and roll or fold up excess and secure to hydraulic hoses or Drawbar.
Figure 2-9: Drawbar LED Waning Lamps Installation
3Pt Hitch Model LED Warning Lamps Installation

Amber Lamps are assembled to the outer extremity of machine.

1. With the Warning Lamp Brackets bends inward, mount a Warning Lamp Bracket to the inside of each end frame Bracket with 1/4-20 x 1 Bolts and Locknuts. See Figure 2-10.

2. Unscrew Amber Lamp Jam Nut if not already removed from Lamp Stud so that the Nut and Washers fall down to the plug. Place an Amber Lamp inside a Lamp Shield so that the Lamps threaded stud sits in the radius of the slot and insert the stud into each Warning Lamp Bracket slot. Secure Amber Lamps with Jam Nut and Washers.

3. Secure Lamp Shields onto Warning Lamp Brackets with 1/4-20 x 1 Bolts and Locknuts.

4. Install the Red Lamps to the inner Light Mount Brackets by sliding the lamp cable into the slot. Secure Red Lamps with Jam Nut and Washers.

5. Install the SMV Bracket to the bracket weldment using four 5/16-18 x 1 Bolts, Flat Washers and Locknuts. Attach SMV Sign using two 5/16-18 x 1 Bolts, Flat Washers and Locknuts.

6. Attach the Flasher Control Module to the underside of the Manual Holder using two 1/4-20 x 1-1/2 Bolts, Flat Washers and Locknuts.

7. Lay out the LED Lamp Harness and attach the harness to the Flasher Control Module.

8. Route the left and right 3 plug cable along the frame and connect to each Red LED Lamp.

9. Route the remaining left and right 2 plug cables along the left and right of the frame and under the Seedbox Supports, connect into each Amber LED Lamp.

10. Lay out the 7 Pin Harness and attach the harness to the Light Module.

11. Route the 7 Pin Harness up the 3Pt Hitch.

12. Bundle and secure with tie wraps after Nylon Tubing, and all Harnesses have been installed.

**IMPORTANT**

All harnesses must be firmly attached to machine frame members, or nylon tubing, so they don't sag or become torn loose by field debris. Use the tie wraps provided.

Check to be sure the harnesses at center of machine is slack enough so as not to be stretched or interfered with while rotating frame from transport to field working position and vice versa.

**NOTE**

The 7 Pin harness connects to the tractor socket when in use. When not in use, it can be stored in the Plug Holder on the 3Pt Hitch. Allow enough harness length to reach tractor socket and roll or fold up excess and secure to hydraulic hoses or 3Pt Hitch.
Figure 2-10: 3Pt Hitch LED Waning Lamps Installation
Acre Meter Installation - Optional

The acre meter consists of three main parts: the Acre Meter, the Pick-up Switch and the Magnet Wheel Assembly.

1. Attach the Acre Meter Angle to the end transmission using two 5/16-18 x 1 Bolts, Lock Washers and Nuts. See Figure 2-12.

2. Attach the Pick-up Switch to the Acre Meter Angle using two #8-32 x 1-1/4 Screws, Lock Washers and Nuts. Do not tighten screws at this time.

3. Attach the Pick-up Switch short ground wire to the small hole in the Acre Meter Angle with a #6-32 x 1/2” Screw and Nut, remove paint under the wire connector to assure a good electrical ground connection. See Figure 2-11.

4. Adjust the Pick-up Switch and bracket so the centerline of Magnet Wheel Assembly and Pick-up Switch are horizontally and vertically aligned with maximum 1/8” between Magnet Wheel Assembly and Pick-up Switch. Firmly tighten all screws. See Figure 2-11.

NOTE

Alignment of the Pick-up Switch and Magnet Wheel Assembly is critical. Improper alignment will cause the acre counter to record acres erratically or not at all.

5. Attach the Acre Meter Assembly to the Acre Meter Bracket using 3/8-16 x 1-1/4 Bolt, Flat Washer, Lock Washer and Nut.

6. Route the cable from the Acre Meter up to the Pick-up Switch and connect the mating plugs.

7. Do Not secure cable until all other optional equipment is installed. Securely fasten the cable using tie straps to prevent wire from becoming entangled or rubbing on moving parts.

8. Program the acre counter following the instructions “Electronic Acre Meter Kit - Optional” on page 3-11.
Figure 2-12: Acre Meter - Optional
Seed Shaft Sensor Installation - Optional

Contact dealer to order.

1. Install Spacer w/Magnet on the Right Seed Shaft between first and second Seed Meters. See Figure 2-13

2. Install Sensor Bracket using Seed Meter existing 1/4-20 x 1 Machine Screws, Lock Washers and Nuts.


4. After installation, seed meters need to be zeroed. (See “Seed Rate Chart” on page 3-9.)
Clutch Installation - Optional

If not equipped contact dealer to order.

1. Install Flangettes and Bearings onto Clutch Transmission with 5/16-18 x 3/4 Carriage Bolts, Lock Washers and Nuts. **Do not** tighten at this time.

2. Install a Coupler onto Speed Reducer Shaft and the Clutch Shaft, while maintaining 9/32” gap between the Coupler Sprockets. Ensure Square Keys are in place.

3. Lift Clutch Shaft Assembly into compartment and through the Bearing. Align and connect Couplers with Double Chain. Tighten Bearing Hardware and Lock Collar.

4. Secure Clutch Torque Arm to the Clutch Transmission Tab with 1/4-20 x 1 Bolt, Spacer, Flat Washer, and Locknut. Clutch Arm must be free to float 1/16 of an inch.

5. Replace current transmission shaft with Clutch Transmission Shaft. Insert Clutch Transmission Shaft through Sprockets and through the Bearings.


7. Install Grommet.

8. Route Clutch Cable through Hose Clamp. Install Hose Clamp to Clutch Transmission.

Figure 2-14: Clutch Installation - Optional
Clutch and Seed Shaft Sensor
Electrical Layout - Optional

The clutch is controlled by a toggle switch on the Console.

1. Route Clutch Harness along front frame tube of seeder and under SMV Bracket, with 2 Spade Connector to the Left /Clutch Transmission and the 3 Pin Connector to the Right/Seed Shaft Sensor. Route Clutch Harness Center Plug (6 pin) through SMV Bracket bottom opening and insert plug into the front facing cut out. Secure with two M5-.08 x 14 BHCS Screws. See Figure 2-17.

2. Connect either 4 ft (3Pt) or 20 ft (Drawbar) Extension Harness to the Clutch Harness. Route along 3Pt Hitch or Drawbar towards front of machine. See Figure 2-15.

3. Plug 2 Spade connector to the Clutch Shaft Assembly Cable.

4. Plug 3 Pin Connector into the Seed Shaft Sensor.

5. Secure Harnesses with tie straps after Nylon Tubing, Harnesses and Hydraulic Hoses if (applicable) have been installed.

---

Figure 2-15: Clutch and Seed Shaft Sensor Schematic
Clutch and Seed Shaft Sensor Console Tractor Installation - Optional

1. Mount Clutch and Seed Shaft Sensor Console Angle Bracket onto Tractor Bracketry where convenient for the operator. See Figure 2-16.

2. Attach Straight Bracket to Angle Bracket using 1/2-13 x 1-1/2 Bolt and Flanged Ny-Lok Nut.

3. Attach the Clutch and Seed Shaft Sensor Console to the Straight Bracket using two 1/4-20 x 1 Bolt, Flat Washers and Locknut.

4. Plug Clutch and Seed Shaft Sensor Console 3 Pin Power Cable into the Tractor Convenience Outlet and 9 Pin Cable into the 4ft or 20ft Extension Harness.

5. Check clutch operation: Clutch will engage when power is applied. (Clutch will make a clicking sound). Set seeder on the ground and drive a short distance while turning switch on and off. The seed shaft will stop rotating when switch is turned to “NO SEED” position. (See “Seed Rate Adjustment” on page 3-8.)
Clutch and Seed Shaft Sensor Layout
- Optional

Figure 2-17: Clutch and Seed Shaft Sensor Layout - Optional
Load Cell Installation - Optional

**CAUTION**
Do not work on or under this machine unless securely blocked and supported by a hoist or tractor or by other sufficient means.

**WARNING**
Do not attempt to lift heavy parts manually. Use a hoist or a fork lift to move these parts into position.

1. Secure Seeder and Seedbox.
2. Remove eight 3/4-10 x 2 Bolts and Lock Washers from the top and bottom of Seedbox Mounts. See Figure 2-18.
3. Raise the Seedbox, remove the Spacer Blocks.
4. Insert Load Cells with the Load Cell Cable oriented toward the middle. See Figure 2-19.
5. Secure each Load Cell to the bottom Seedbox Mounts with two 3/4-10 x 2 Bolts and Lock Washers.
6. Carefully lower the Seedbox ensuring the cutout on the Seedbox goes over the Load Cell Cable.
7. Secure Seedbox to each Load Cell with two 3/4-10 x 2 Bolts and Lock Washers.

Figure 2-18: Load Cell Installation - Optional

Figure 2-19: Load Cell Schematic - Optional
ASSEMBLY

Clutch and Seed Shaft Sensor Console w/Scale Indicator Tractor Installation - Optional

1. Mount Clutch and Seed Shaft Sensor Console w/ Scale Indicator Angle Bracket onto Tractor Bracketry where convenient for the operator. See Figure 2-20.
2. Attach Straight Bracket to Angle Bracket using 1/2-13 x 1 Bolt and Flanged Ny-Lok Nut.
3. Attach the Scale Display Bracket to Straight Bracket using 3/8-16 x 1-1/4 Bolts and Flanged Ny-Lok Nuts.
4. Attach the Console to Scale Display Bracket using two 1/4-20 x 3/4 Bolts, Flat Washers and Locknuts.
5. Attach the GT400 Indicator Bracket to Scale Display Bracket using 1/4-20 x 1/2 Bolts and Spiral Flanged Locknuts.
6. Tilt the GT400 Scale Indicator to latch the top of the GT400 Indicator Bracket. Secure bottom with 1/4-20 x 1/2 Bolts and Spiral Flanged Locknuts.
7. Plug the Power and Indicator Cables into the bottom of GT400 Scale Indicator.
8. Attach 3 Port Splitter to Indicator Cable.
9. Plug Clutch and Seed Shaft Sensor Console 3 Pin Power Cable into the tractor and 9 Pin Cable into the 4ft or 20ft Extension Harness.
10. Plug GT400 Scale Indicator Power Cable into the Tractor and connect each Load Cell Cable to 3 Port Splitter.
11. Secure cables with tie straps.
12. Refer to GT400 Vendor Operator's manual for cabling and set-up instructions.

Figure 2-20: Seed Shaft Sensor and Clutch Console w/Scale Indicator
Table provided for general use.

<table>
<thead>
<tr>
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Coil Tine Harrow Installation -
Optional

1. Attach the two Harrow Mounting Brackets to the Frame Tube with 3/4-10 U-Bolts, Flat Washers and Locknuts.

2. Slide the Harrow Adjuster up into the Harrow Mounting Bracket. Align the holes and insert Hitch Pin and secure with Hair Pin Cotter.


5. Attach the bottom of each Jack to the bottom of the Harrow Adjuster. Cranking the Jack up or down to align the holes. Secure with a 1/2-13 x 3-3/4 Bolt and Flanged Locknut.
Figure 2-21: Coil Tine Harrow
**CAUTION**

Do not work on or under this machine unless securely blocked and supported by a hoist or tractor or by other sufficient means.

### S-Tine Harrow Installation - Optional

1. Attach the two Harrow Mounting Brackets to the Frame Tube with 3/4-10 U-Bolts, Flat Washers, and Locknuts.

2. Slide the Harrow Adjuster up into the Harrow Mounting Bracket. Align the holes and insert Hitch Pin and secure with Hair Pin Cotter.


5. Attach the bottom of each Jack to the bottom of the Harrow Adjuster. Cranking the Jack up or down to align the holes. Secure with a 1/2-13 x 3-3/4 Bolt and Flanged Locknut.

6. Locate and install S-tines as needed to cover tractor tire tracks. Suggested pattern is to use 1-3/8” point on center tine and 2-1/2” points on each side of wheel track. If needed, additional tines may be purchased and installed.
Figure 2-22: S-Tine Harrow

- Flat Washer, 3/4
- Locknut, 3/4-10
- Clamp
- Duckfoot Point
- U-Bolt, 3/4-10 x 7-13/16 x 9-1/4
- Square Tube
- S-Tine Harrow Mounting Bracket
- Flange Locknut
- U-Bolt, 5/8-11 x 2-11/16 x 4-1/2
- Bolt, 5/8-11 x 1-3/4
- Jack
- Locknut, 5/8-11
- Bolt, 1/2-13 UNC x 3-3/4
- Bolt, 3/8-16 x 1-3/4
- Hair Pin
- Hitch Pin
- S-Tine Harrow Adjusters
- Locknut, 5/8-11
- Washers, 0.656 x 1.063 x 0.375
Table provided for general use.

NOTES:
This chapter covers the basic operation and usage procedures for the Landoll/Brillion Sure Stand Seeder. Be sure to read and understand the Safety Procedures and Cautions starting on page 1-2.

Seeder Operation

The Sure Stand Seeder is available as a pull-type hitch or three-point hitch version.

Tractor Preparation

Never allow anyone to ride on the Seeder at any time. Allowing a person to ride on the machine can inflict serious personal injury or death to that person.

All hydraulically elevated equipment must have Transport Locks installed or be lowered to the ground, when servicing or when equipment is idle. Failure to take preventive measures against accidental lowering can result in serious personal injury.

When transporting farm implements on public roads, it is the responsibility of the operator to abide by state and local laws concerning wide loads, speed, safety emblems and safety lighting equipment. Drive at safe speeds, particularly when rounding corners, crossing rough ground or driving on hillsides, to prevent tipping the tractor.

Always lock the Tractor Drawbar in the center position when transporting the unit. Failure to do so can result in serious injury or death and cause damage to the machine.
OPERATION

Tractor Preparation/Attaching of 3Pt Hitch Seeder

1. The Seeder is designed to be used with Free Link CAT 2, 3; Quick Hitch Coupler CAT 2, 3N, 3. See Figure 3-1. Be sure Tractor's Hitch Capacity is not exceeded by the Laden Mass of the Seeder. Refer to Tractor Operator's Manual.

2. Be sure Tractor is properly ballasted. A minimum 25% of Tractor and Equipment Laden Mass must be on Tractor Front Wheels in transport position to maintain stability. Calculate the Loaded Seeder Mass. See “General Reference and Specifications” on page 5-1. (Seeder weight plus the seed box capacity with desired seed.) Refer to Tractor Operator’s Manual.

3. Check the Tractor tire inflation levels to ensure that they are properly inflated for the additional Laden Seeder Mass. Refer to the Tractor Operator's Manual. Be sure not to over ballast and exceed Tractor Tire Capacity.

4. Set Tractor 3Pt Lower Links to allow lateral (torsional) float. Refer to Tractor Operator’s Manual. If left rigid, your Brillion Seeder may not follow ground contours resulting in a poor germination.

5. Set Lift Rod length long enough to ensure Seeder can float downward in the case of a furrow or waterway. Lower Links should be the same height, leveling your Brillion Seeder side to side. Fine adjustments may need to be made after hookup is completed. Refer to the Tractor Operator’s Manual.

6. Attach Seeder to the Tractor’s 3Pt Free Link or Quick Hitch Coupler using the appropriate size pins and bushings. Be sure to use the hardware provided and is in good working order. See Figure 3-1.


8. Plug the 7 Pin Connector to tractor outlet, routing cable by avoiding pinch points.
   • Make sure the tractor has a good clean receptacle, free of dirt and corrosion.
   • Make sure the 7 Pin Connector is inserted ALL the way in. With tighter fitting pins, operator may think the Connector is all the way in, but really isn't.

DANGER

Do not allow any bystanders to stand between the tractor and the implement while backing up to the implement.


10. Raise seeder: Remove Parking Pins from both sides and relocate to storage position. Raise Parking Stands, both sides. See Figures 3-2 and 3-4. Adjust or lock tractor sway stabilizers if equipped, centering the Seeder with the Tractor. Refer to the Tractor Operator’s Manual.

11. Lower Seeder, if necessary level Seeder side to side (laterally) by adjusting Lift Rod length. Level Seeder front to back by adjusting the Tractor Upper Link length as required. Refer to the Tractor Operator’s Manual.
Figure 3-1: 3 Point Hitch

Category 2 Free Link

Category 3 Free Link

Category 2 Quick Hitch

Category 3 and 3N Quick Hitch
OPERATION

Attaching/Detaching 3Pt Hitch Seeder

![Figure 3-2: Parking Stand (Shown with parts removed for clarity)](image1)

![Figure 3-3: Parking Pin Stored](image2)

![Figure 3-4: Parking Pin Engaged](image3)

**WARNING**

To prevent the implement from tipping forward on the frame, disengage parking stand only when the seeder is fully attached to the tractor. Be sure to observe the following sequences.

Hooking Up the Seeder:
1. Attach seeder to the tractor. Raise the Seeder.
2. Remove the 3/4” Pin and lift the Parking Stands until the bottom hole is aligned with the bracket hole. Replace the 3/4” Pin. Both sides. **See Figures 3-2.**
3. Remove the 3/4” Parking Pins from the Frame Arm Guides and place into frame tabs. Both sides. **See Figures 3-3 and 3-4.**

Unhooking the Seeder:
1. Raise Seeder, remove the 3/4” Pins and lower the Parking Stands, align one of the three holes with the bracket hole depending upon the site ground, replace the 3/4” Pins. Both sides. **See Figures 3-2.**
2. Insert the 3/4” Parking Pins into the Frame Arm Guide to lock the Rear Roller Arms. Both sides. **See Figure 3-4.**
3. Lower Seeder and disconnect the tractor from Seeder.
Tractor Preparation/Attaching of Pull Type Seeder

1. The Seeder is designed to be used with a CAT 2 or CAT 3 Drawbar Hitch.

**DANGER**

Do not allow any bystanders to stand between the tractor and the implement while backing up to the implement.

2. Align the tractor drawbar with the machine. Raise or lower the hitch, as needed, using the jack. Attach the unit with proper size hitch pin. See Table 3-1.

Table 3-1: Pin Size

<table>
<thead>
<tr>
<th>DRAWBAR CAT</th>
<th>Min Pin Size</th>
<th>Max PTO HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1-1/4&quot; (30mm)</td>
<td>154 (115 Kw)</td>
</tr>
<tr>
<td>3</td>
<td>1-1/2&quot; (38mm)</td>
<td>248 (185 Kw)</td>
</tr>
</tbody>
</table>

3. Raise and rotate jack to stored position before setting the machine in motion.

4. Clean all hydraulic couplings and attach to the tractor.

5. If Transport Locks are not engaged, fully extend the hydraulic lift cylinders and rotate Transport Locks in the engaged position over the cylinder rods. Secure with the Clevis Pins and Hairpin Cotters. See Figure 3-5.

6. Attach safety chain to tractor allowing plenty of movement for turning both directions. The safety chain should latch securely to prevent it coming loose. See Figures 3-6 and 3-7.

7. Plug the 7 Pin Connector to tractor outlet, routing cable by avoiding pinch points.
   - Make sure the tractor has a good clean receptacle, free of dirt and corrosion.
   - Make sure the 7 Pin Connector is inserted ALL the way in. With tighter fitting pins, operator may think the Connector is all the way in, but really isn’t.
   - Make sure the tractor receptacle cover latches over the keyway on the 7 Pin Connector to hold the Connector in place.
   - If an operator plugs in the 7 Pin Connector, but the lights Do not seem to work right, check the above items to make sure there is a good connection with the 7 Pin Connector.

8. Install Clutch and any other Optional Harness to tractor if applicable.
Attaching/Detaching Pull TypeSeeder

Attaching the Seeder for Field Operations:

Seeder parked lowered
1. Attach Seeder to the Tractor.
2. Raise the Seeder fully to extend the Hydraulic Lift Cylinders and rotate the Transport Locks in the engaged position over the Cylinder Rod. Secure with the Clevis Pins and Hairpin Cotters. See Figure 3-5.
3. Remove the 3/4” Parking Pin from the Frame Arm Guide and place into Frame Tab for storage. See Figures 3-3 and 3-4.
4. Raise and rotate Jack to stored position before setting the machine in motion.
5. Transport the Seeder to the area to be seeded.
6. Disengage each Transport Lock so the Transport Lock rests on the Wheel Arm. Secure with Clevis Pin and Hairpin Cotter into the Wheel Arm Tab. See Figure 3-8.

Seeder parked raised
1. Attach Seeder to the Tractor.
2. Raise and rotate Jack to stored position before setting the machine in motion.
3. If not already done, raise Seeder fully and engage Transport Locks. See Figure 3-5.
4. Transport the Seeder to the area to be seeded.
5. Disengage each Transport Lock so the Transport Lock rests on the Wheel Arm. Secure with Clevis Pin and Hairpin Cotter into the Wheel Arm Tab. See Figure 3-8.

Detaching the Seeder:

Parking Seeder lowered
1. With Seeder raised, insert the 3/4” Parking Pin into the Frame Arm Guide to lock the Rear Roller Arm. See Figure 3-4.
2. Raise the Seeder fully to extend the Hydraulic Lift Cylinders and rotate the Transport Locks to the stored position. Secure with the Clevis Pins and Hairpin Cotters. See Figure 3-8. Lower Seeder, relieve pressure from Hydraulic Hoses.
3. Rotate and lower Jack.
4. Disconnect the Tractor from Seeder.

Parking Seeder raised
1. Raise the Seeder fully to extend the Hydraulic Lift Cylinders and rotate the Transport Locks to the locked position. Secure with the Clevis Pins and Hairpin Cotters. See Figure 3-5.
2. Relieve pressure from Hydraulic Hoses.
3. Rotate and lower Jack.
4. Disconnect the Tractor from Seeder.

Hydraulic Lift System

The Seeder is equipped with a hydraulic lift system to raise and lower the unit in the field.

![Figure 3-8: Transport Lock Stored](image)

**WARNING**

Escaping hydraulic fluid can cause serious personnel injury. Relieve system pressure before repairing, adjusting, or disconnecting. Wear proper hand and eye protection when searching for leaks. Use cardboard instead of hands (See Figure 3-9.) Keep all components (cylinders, hoses, fittings, etc.) in good repair.

![Figure 3-9: Hydraulic Leak Detection](image)
1. If the hydraulic system is not filled with oil it should be purged of air before transporting and field operations. Carefully hitch the Seeder to the tractor and connect the hydraulic lift hoses.

2. Remove the Transport Locks. See Figure 3-8.

3. Check to make sure the tractor hydraulic reservoir is full of the manufacturer's recommended oil.

4. Slowly raise the machine until all lift cylinders are fully extended. Lower and raise the unit to verify that all cylinders are working throughout the stroke. Fully extend the lift cylinders and continue to hold the lever until all cylinder rod movement stops. Raise/Lower machine 5 times to purge air from the system.

5. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.

6. Re-install Transport Locks. See Figure 3-5. Lift Circuit approximate oil requirement: .65 gallons.

**Rear Roller Air System**

**IMPORTANT**
Do not at any time operate the Rear Roller Air System Air Pressure below 15psi. The Air Springs must maintain a minimum Air Pressure for proper inflation. Too low of pressure will cause the Air Springs to rub internally and lead to failure.

**WARNING**
Relieve Air System Pressure before attempting to adjust or service Air Springs and Air Lines. Wear protective gloves and safety glasses or goggles when working with Air System. High pressure air can propel debris at high speed, causing eye injury or blindness. If you are injured, obtain medical aid immediately.

**IMPORTANT**
Do not pressurize the Rear Roller Air System unless all related components are installed.

Each Rear Roller Arm has an Air Spring to increase down force on the Rear Roller which improves seed to soil contact. Air Pressure adjustments are made at the Air Manifold on either the 3Pt Hitch or Drawbar. The Manifold Schrader Valve allows Air Pressure to be increased from an external source such as shop air or allows Air Pressure to be decreased by releasing air from the system. To relieve all System Air Pressure, pull Relief Valve Pull-Ring. See Figure 3-10.

The Rear Roller Air System can safely operate in a range from 15psi to 100psi. Recommended Air System Pressure is 90psi. Do not exceed 100psi System Pressure which is the maximum recommended working pressure the Air Springs are rated for. Air Springs maximum jounce pressure rating is 200psi. A Relief Valve in the Manifold protects the Air System from excessive pressure.

Do not remove or adjust the Relief Valve or damage to the Air System may occur. The system is maintenance free. Reduce Air Pressure to 15psi if stored for an extended period of time.
Seed Rate Adjustment

**WARNING**

- To prevent damage to the seed meters, do not apply excessive force to the adjusting nuts. Failure to do so may result in the seed being pinched between the cut-off and washer inside the seed cup.
- Do not close the meters more than 1/8" when there is seed in the meters without rotating the seed shaft. This prevents damage to the rotating washers and retainer rings in the seed meters.
- Do not attempt to open meters more than 1". (Feed rolls could become disengaged from washer in the seed cup.)

**NOTE**

- To avoid seed meter damage, if there is seed in the meters, decrease rate in small increments. Decrease rate no more than one nut revolution and rotate seed shaft to purge seed from meters. Continue adjustment as needed.

**NOTE**

Before filling with seed be sure seed shaft turns freely and seed meters are free of any foreign matter. Wrenches for adjustment and the Calibration Crank Assembly are stored in the toolbox. See Figure 3-11.

**IMPORTANT**

The Clutch if equipped must be disengaged (power off) when Seed Shafts are turned manually for Calibration.

If Seeder is not equipped with a Clutch, remove Chain from Speed Reducer to Transmission Shaft. This allows Seed Shaft to rotate independently from Front Roller. See Figure 3-14.

The Seed Rate Chart is located inside the Seed Box Cover and in this manual. See Figure 3-13. It should be used as a general guide only. Because of seed variation, a more accurate rate can be determined by turning the 3/4" Hex Nut on the Transmission to Calibrate the Seeder. See “Calibration for Unlisted Seeds” on page 3-10.

On the right side, the Seed Rate for the Seed Meters can be set by adjusting the Seed Rate Adjusting Nut and Adjusting Screw. See Figure 3-12.

**IMPORTANT**

Do not Loosen or Adjust the Hex Nuts with Set Screws.

---

**Figure 3-11: Adjustment Wrenches**

**Figure 3-12: Seed Rate Adjustment**

1. To increase the rate of seeding, loosen the 1-8 Nut on inside of the Bearing and turn the Seed Rate Adjusting Nut to the desired setting, then tighten the 1-8 Nut using supplied wrenches.

2. To decrease the rate of seeding, loosen the Seed Rate Adjusting Nut and set it to the new desired position, then tighten the 1-8 Nut using supplied wrenches.
## Seed Rate Chart

### PLANTING RATES FOR SS16/SSP16 (MICROMETER) IN POUNDS PER ACRE

RATES ARE INTENDED AS A GUIDE ONLY. VARIATIONS IN SIZE AND CLEANLINESS WILL AFFECT RATES. CHECK ACREAGE AND POUNDS OF SEED USED FOR BEST RESULTS.

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<td>16</td>
<td>20</td>
<td>26</td>
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<td>36</td>
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</table>

* WILL CRACK SOME SEEDS AT THESE SETTINGS
NOT RECOMMENDED: LENTILS, SORGHUM, SUDAN GRASS

Figure 3-13: Seed Rate Chart
Calibration for Unlisted Seeds

**IMPORTANT**

The Clutch if equipped must be disengaged (power off) when Seed Shafts are turned manually for Calibration.

If Seeder is not equipped with a Clutch, remove Chain from Speed Reducer to Transmission Shaft. This allows Seed Shaft to rotate independently from Front Roller. See Figure 3-14.

**Figure 3-14: No Clutch Disengagement**

Landoll assumes no liability pertaining to Seeding Rates achieved with this Seeder. Rates listed are general in nature and should be used as starting points only. Seed varieties and blends listed represent those calibrated through in-house test meters.

Variations in actual rates may be realized due to differences in seed lots. For accurate rates with seeds being used, follow the calibration instructions listed on the Seed Chart inside the seed box cover or refer to the Operator’s Manual. The information listed in the above seed charts is subject to change without notice.

Calibrate Unlisted Seeds as follows:

1. Seed Shaft turns 163 Revolutions per Acre Seeded.
2. Raise machine and lock in Transport Position.
3. Place a canvas or tarp under machine to catch any seed.
4. Disengage Clutch (If Equipped). Turn 3/4 Hex on Transmission Shaft 163 revolutions Counter-Clockwise (CCW) with provided Crank, 41 turns may be used if results are adjusted as stated in Step 5. See Figure 3-15.
5. Weigh seed for approximate planting rate in lbs/acre multiply weight by 4 if only 41 turns were used.
**Clutch Operation - Optional**

The clutch is controlled by a toggle switch on the Console. See Figure 2-16.

Clutch characteristics are as follows:

1. The clutch is engaged when power (12 volts) is applied.
2. The seeder has provisions to mechanically lock the clutch to drive the seed metering system, by aligning the hole in the Clutch Shaft with the slot in the Clutch Hub and securing with a 1/4 x 1-3/4 Bolt, Flat Washers and Locknut. See Figure 3-16.
3. The clutch must be disengaged (power off) when seed shafts are turned manually for calibration.
4. Check clutch operation: Clutch will engage when power is applied. (Clutch will make a clicking sound). Set seeder on the ground and drive a short distance while turning switch on and off. The seed shaft will stop rotating when switch is turned to “NO SEED” position.

**IMPORTANT**

At no time use high pressure water or air to clean the clutch as damage could occur.

**Electronic Acre Meter Kit - Optional**

**IMPORTANT**

Acre Meter is dust and splash resistant, under no circumstances should this unit be submerged in any conductive, corrosive, or flammable liquid. At no time use high pressure water or air to clean it, as this can damage the unit.

**Settings for Loup Acre Meters**

The battery operated Acre Meter operates in one of two modes.

1. In sleep mode, the display is blank, and the counter is accumulating acres. Sleep mode will be entered if a button is not pressed for 20 seconds.
2. In entry mode, the display is on, and the operator can enter values. To get into entry mode, press the */FUNC button. If you continue to press the */FUNC button, the acre counter will cycle through the functions that it can perform. The LEDs above the display indicate which function is selected.

**The available functions are:**

- Field Acres, Total Acres, Pulses per 400 feet, Width, Password and Low Battery

**Field Acres**

Press the */FUNC button until the “FIELD” LED is lit. The digits indicate the acres covered since the field acre counter was cleared.

To clear the field acre count, press the UP and DOWN buttons simultaneously for two seconds. If a password has been entered, you will not be able to clear the total acre count. Field acres will count in tenths of an acre up to 9999.9 acres.

**Total Acres**

Press the */FUNC button until the “FIELD” and “TOTAL” LEDs are lit. The digits indicate the acres covered since the total acre counter was cleared.

To clear the total acre count, press and hold the UP and DOWN buttons for two seconds. If a password has been entered, you will not be able to clear the total acre count. Total acres will count from 1 to 99999 acres.

**Pulses Per 400 Feet**

Press the */FUNC button until the “PULSES” LED is lit. The number in the display indicates how many pulses are generated for every 400 feet driven. There are two methods to enter the pulses per 400 feet:
1. If you know the number, select it using the UP and DOWN buttons. When you press the */FUNC button, the Acre Counter will accept the number in the display as the new pulses per 400 feet. See Table 3-2.

2. If you Do not know the pulses per 400 feet, press and hold the UP and DOWN buttons until the “0” appears in the display. The “PULSES” LED will blink. The acre counter is now counting shaft rotations. Enter the cab and drive 400 feet. Press the */FUNC button to wake up the acre counter. The “PULSES” LED will light. The number displayed is the pulses per 400 feet. Press the */FUNC button to accept the setting.

If a password is set, you will not be able to adjust the pulses.

**Width**

Press the */FUNC button until the “WIDTH” LED is lit. The number displayed is the length of your implement in feet.

To adjust the width, press the UP and DOWN buttons. If a password has been entered, you will not be able to adjust the width.

The width can be adjusted from .1 to 99.9 feet, in tenths of a foot.

**Password**

The password function allows you to protect the total acre count, pulses per 400 feet, and width settings with a password. This stops anyone from accidentally changing those settings. When the acre counter is shipped, the password is disabled. You can modify the pulses per 400 feet and implement width at any time.

Press the */FUNC button until the “PASS” LED is lit. The digits will display the word “Ent” or “Dis”.

If the display shows “Dis”. The password is disabled. The total acre count, pulses/400 feet, width, and password settings can be adjusted using the UP and DOWN buttons. The password can also be changed using the UP and DOWN buttons.

If the password is forgotten, it can be disabled by removing the batteries. The password is intended for rental units. It is recommended that a seal be affixed to the rear plate of the acre counter to determine if the settings have been tampered with.

**Changing the Password**

Select a new password using the UP and DOWN buttons. Press the */FUNC button until the word “Set” appears in the display. Release the */FUNC button. The number in the display is your new pass code. Make sure you record this number. Press and hold the */FUNC button until the word “Dis” appears in the display.

If the password is forgotten, it can be disabled by removing the batteries. The password is intended for rental units. It is recommended that a seal be affixed to the rear plate of the acre counter to determine if the settings have been tampered with.

**Battery Replacement**

The battery operated acre counter uses 3 AA batteries. The batteries should last between 5 and 10 years. The acre counter will last much longer than that. Eventually, you will have to replace the batteries. The “BATT” LED will light when the batteries require replacement. Remove the acre counter from the implement and undo the 4 screws on the back of the case. This will separate the housing from the rear plate. Replace the batteries with 3 high quality AA alkaline batteries.

See “Acre Meter Troubleshooting” on page 4-8.
<table>
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Table 3-2: Acre Meter Quick Setting Chart
Coil Tine Harrow - Optional

The Seeder has a Optional Coil Tine Harrow to remove tire tracks before the rollers compact the soil. The coils are individually mounted for flexibility and backup protection. The Tines depth should be adjusted so the tips are approximately 2” into the soil.

**NOTE**
The tines will hang straight down when the implement is raised.

1. The Coil Tine may be adjusted up or down as needed.
2. Adjust the Coil Tine Harrow depth by removing the 3/4 x 4-1/2 Hitch Pin. Crank the Sidewind Jack up or down to achieve the desired depth. Re-Insert Hitch pin and secure with Hair Pin Cotter. Both sides should be set at the same depth. **See Figure 3-17.**

![Figure 3-17: Coil Tine Harrow Adjustment](image)

S-Tine Harrow - Optional

The Seeder has an Optional S-Tine Harrow to remove the tire tracks before the rollers compact the soil.

**NOTE**
S-tines should not be operated any deeper than necessary to remove tractor tire tracks. Otherwise, wet soil is brought up which will stick to the rollers, draft load is increased, and under some conditions, tines may deflect back to rollers and break.

1. The S-Tine Harrow depth may be adjusted for a deeper more aggressive depth or shallower for minimal disturbance.
2. Adjust the S-Tine Harrow depth by removing the 3/4 x 4-1/2 Hitch Pin. Crank the Sidewind Jack up or down to achieve the desired depth. Re-Insert Hitch pin and secure with Hair Pin Cotter. Both sides should be set at the same depth. **See Figure 3-18.**

![Figure 3-18: S-Tine Harrow Adjustment](image)

Seed Shaft Console LED with Clutch Control - Optional

**Basic Operation:**
During normal operation the Console LED for the Seed Shaft will not be illuminated. The Shaft Sensor will be activated by the Spacer with Magnet installed on the Seed Shaft being monitored. The Shaft Sensor is a standard Loup Shaft Sensor, set to 20 second delay timing. When no signal is detected for 20 seconds by the sensor, the LED in the Console will illuminate and the audible alarm will sound indicating a fault. The alarm will become silent after 30 seconds and will not sound again until the Seed Shaft returns to a fully functional condition.

**NOTE**
If Shaft Sensor stall alarm occurs, be aware that the seeder has not been planting for 20 seconds.

The Clutch Master toggle switch allows you to go from “SEED” to “NO SEED” operations.
General Operation

1. The minimum horsepower requirements are typically 6-8 horsepower per foot. This will vary widely due to speed, depth, moisture, and types of soils. Local dealers can help in making recommendations for your areas. For 3Pt Hitch models size tractor by 3Pt Hitch Capacity.

2. Operating speed is typically 4.5-6 mph. Excessive speed can result in undesirable germination, seeder bouncing, or other unpredictable results. Reduce speed in rocky conditions to prevent wheel breakage.

Transporting theSeeder

1. Check and follow all federal, state, and local requirements before transporting the Seeder.

2. The Seeder should be transported only by tractor required for field operation. The implement weight should not exceed more than 1.5 times the tractor weight. Maximum transport speed for the Seeder is 20 mph for the implement.

3. When towing equipment in combination, the maximum equipment ground speed shall be limited to the lowest specified ground speed of any of the towed implements.

4. Maximum transport speed shall be the lesser of travel speed specified in the operator's manual, speed identification symbol, information sign of towed equipment, or limit of road conditions.

5. Slow down when driving on rough roads. Reduce speed when turning, or on curves and slopes to avoid tipping. Equipment altered other than the place of manufacture may reduce the maximum transport speed. Additional weight, added tanks, harrowing attachments, etc. may reduce implement load carrying capabilities.

6. Before transporting:
   a. Know the height and width of the implement being towed. Markers, tanks, attachments, etc. can increase the height and width of the implement.

   ![Figure 3-19: SMV Sign](image)

   **DANGER**

   Stay away from power lines when transporting, extending implement. Electrocution can occur without direct contact.

   b. Check to see that the tractor hitch capacity is rated to carry the weight of the Seeder Hitch.

   c. Use provided pins that properly fits the Lift Arms or Quick Hitch and Implement Hitch.

   d. Plug in the safety lights to the tractor 7 Pin Connector.

   e. Fully raise the Seeder Hydraulic Lift and 3Pt Hitch.

   f. Make sure all Transport Locks and Hair Pin Cotters and Clevis Pins are installed. See “Transport Lock Engaged” on page 3-5.

   **WARNING**

   Failure to use transport lock pins during transport may result in permanent equipment damage, serious injury, or death.

   g. Check all tires for proper inflation, and that lug nuts are properly torque. (See “Tires” on page 4-3.)

   h. Verify that all warnings lights, SMV sign, reflectors, and safety decals are clearly visible and functioning properly.

   i. Transport during daylight hours whenever possible. Always use flashing warning lights, except where such use is prohibited by law. Make sure lights, reflectors and SMV emblem are clearly visible and operating. Remove any obstructions such as dirt, mud, stalks or residue that restricts view before transporting. See Figure 3-19.
Table provided for general use.

NOTES:
# General Torque Specifications

*(rev. 4/97)*

This chart provides tightening torques for general purpose applications when special torques are not specified on process or drawing. Assembly torques apply to plated nuts and capscrews assembled without supplemental lubrication (as received condition). They do not apply if special graphite moly-disulfide or other extreme pressure lubricants are used. When fasteners are dry (solvent cleaned) add 33% to as received condition torque. Bolt head identification marks indicate grade and may vary from manufacturer to manufacturer. Thick nuts must be used on grade 8 capscrews. Use value in [ ] if using prevailing torque nuts.

## UNC Specified in Foot Pounds

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<thead>
<tr>
<th>UNC SIZE</th>
<th>SAE Grade 2</th>
<th>SAE Grade 5</th>
<th>SAE Grade 8</th>
<th>UNF SIZE</th>
<th>SAE Grade 2</th>
<th>SAE Grade 5</th>
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</table>

## METRIC:

Coarse thread metric class 10.9 fasteners and class 10.0 nuts and through hardened flat washers, phosphate coated, Rockwell “C” 38-45. Use value in [ ] if using prevailing torque nuts.

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<th>Nominal thread diameter (mm)</th>
<th>Newton Meters (Standard Torque)</th>
<th>Foot Pounds (Standard Torque)</th>
<th>Nominal Thread Diameter (mm)</th>
<th>Newton Meters (Standard Torque)</th>
<th>Foot Pounds (Standard Torque)</th>
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<td>1790 [1950]</td>
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<tr>
<td>18</td>
<td>275 [330]</td>
<td>205 [245]</td>
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Hydraulic Fitting Torque Specifications

37 degree JIC, ORS, & ORB (REV. 10/97)
This chart provides tightening torques for general purpose applications when special torques are not specified on process or drawing. Assembly torques apply to plated nuts and capscrews assembled without supplemental lubrication (as received condition). They Do not apply if special graphite moly-disulfide or other extreme pressure lubricants are used. When fasteners are dry (solvent cleaned) add 33% to as received condition torque. Bolt head identification marks indicate grade and may vary from manufacturer to manufacturer. Thick nuts must be used on grade 8 capscrews. Use value in [ ] if using prevailing torque nuts.

### TORQUE SPECIFIED IN FOOT POUNDS

#### PARKER® BRAND FITTINGS

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#### GATES® BRAND FITTINGS

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### Fasteners

Before operating your Brillion machine, check all hardware for tightness. Use the Tightening Torque Table as a guide. See Page 4-1.

After a few hours of use, check entire machine and tighten any loose nuts or bolts. Daily or periodic checks should be made thereafter.

When replacing bolts, be sure to use fasteners of equal grade.
Tires

Recommended Tire Size:  11L x 15, 12Ply Implement Rib Rating
Tire Inflation Pressure:  52 PSI

When Re-Installing the 9/16-18 Wheel Nuts tighten to 50 foot-pounds using the sequence in See Figure 4-1. Then tighten to full torque of 90 ft-lbs.

Wheel Hub Bearing Maintenance

Wheel Bearing maintenance should be performed at the beginning of every season of use. Check the Wheel Bearings periodically for excessive end play. If needed, adjust or replace them using the following procedure:

1. Place the Frame on blocks or stands sufficient to lift the Tire clear of the ground.
2. Remove the Tire.
4. Remove the Hub. Clean and inspect the Bearings and Hub Cavity. Replace any worn or defective parts.
5. Repack the Bearings using a high-quality Wheel Bearing Grease.
6. Slide the Triple Lip Seal onto the Spindle. Do not install the Seal into the Hub.

8. Install the Outer Bearing Cone, Washer and Slotted Nut.
9. Tighten the Slotted Nut while rotating the Hub until there is a slight resistance to wheel rotation. Then, back the Slotted Nut off one notch, until the wheel rotates freely without end play.
10. Slide the Triple Lip Seal to the Hub and install the Seal in the Hub.
11. Install a new Cotter Pin and re-install the Hub Cap.
12. Grease Wheels Hubs every 50 hrs. See Figure 4-2.

NOTE

The Triple Lip Seals should point away from the Hub to keep contaminants out and allow grease to pass.

7. Slide the Inner Bearing Cone and Hub onto the Spindle.

Figure 4-1: 6 Bolt Tightening Sequence

Figure 4-2: Lubrication Points and Intervals
Lubrication Maintenance

The SS16 Seeder is equipped with maintenance free Bearings. These areas require no lubrication.

- Grease Optional Cat3 Ball Hitch Daily. See Figure 4-3.
- When the Machine is not used for some time, exposed portions of the Hydraulic Cylinder Rods must be cleaned and covered with a thick coat of grease to prevent corrosion, which will damage the seal.

Figure 4-3: Grease Optional Cat3 Ball Hitch Daily

Hydraulic Maintenance

**IMPORTANT**

Lower the unit to the ground, and relieve hydraulic pressure before attempting to service any hydraulic component.

**WARNING**

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than hands to search for suspected leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic system.

**Figure 4-4: Hydraulic Leak Detection**

1. Check the tractor hydraulic fluid level per tractor owner's manual and after any leakage. Check fluid level with the cylinders in the retracted position.

2. If a cylinder or valve leaks, disassemble the parts to determine the cause of the leak. Any time a cylinder is opened up, or whenever any seal replacement is necessary, it is advisable to clean all parts and replace all seals. Seal kits are available from your Landoll dealer.

3. Check all hydraulic hoses weekly. Look for binding or cracking. Replace all worn or defective parts immediately.

4. Transport locks are provided to hold the implement in a raised position. See Figure 3-5. Do not attempt to perform any service work under the implement without first installing the transport locks. Before servicing any hydraulic component, lower the implement to the ground and relieve all system pressure. If a hydraulic component is disconnected, repaired, or replaced, it will be necessary to purge the system of air before operation. (See “Hydraulic Lift System” on page 3-6.)
Rear Roller Air System Maintenance

**IMPORTANT**
Do not at any time operate the Rear Roller Air System Air Pressure below 15psi. The Air Springs must maintain a minimum Air Pressure for proper inflation. Too low of pressure will cause the Air Springs to rub internally and lead to failure.

**WARNING**
Air System should remain pressurized at 90psi.
- If Air System loses air pressure, pressurize Air System to 90psi and check for leaks by spraying soapy water on Push-to-Connect Fitting connections and Air Springs. Repair as required.
- Check Nylon Tubing for rubbing and kinks. Repair as required. Nylon Tubing ends should be smooth, burr free. Burrs can cause slow leaks.
- Check Air Spring Guide Rod and Guide Rod Bushing for excess wear. Relieve all System Air Pressure by pulling Relief Valve Pull-Ring before attempting to adjust or service Air Springs and Air Line Nylon Tubing.

**Roller Axle Assembly**
After an initial run of 5-10 hours, check the Roller Axle Assemblies to ensure that the wheels are tight to one another. If not slide the Rear Roller Wheels tight together and adjust the Axle Clamps.
Front Roller push wheels against welded Roller End Plate and adjust the Axle Clamp. See Figure 4-5.

**Clamp Tightening**
Tighten the Clamp Socket Head Bolt. Torque to 75ft/lbs. Thereafter check assemblies every 50-100 hours. See Figure 4-6. Clamps must be assembled with the open section straddling the welded seam of the drum pipe.

**NOTE**
Failure to locate the clamp band bolt over the weld will cause clamp band to loosen and slide.
Seed Meter Adjustment

**IMPORTANT**

The Clutch if equipped must be disengaged (power off) when Seed Shafts are turned manually for Calibration.

If Seeder is not equipped with a Clutch, remove Chain from Speed Reducer to Transmission Shaft. This allows Seed Shaft to rotate independently from Front Roller. See Figure 3-14.

**IMPORTANT**

All the Seed Meters MUST BE CLOSED! It may be necessary to individually adjust Seed Meter Adapter with Seed Meter attached or Seed Meter if Meter Adapter is not used.

All Seed Meters must be set the same to ensure seeding uniformity. To check, set the Seed Rate Adjusting Nut to 0-A. The "A" on the Seed Rate Adjusting Nut is positioned over the "0" (the nut covers half of the "0") and snug against the bearing. All Seed Meter Cups should be closed. If not, there are three adjustments to make as needed. See Figure 4-5.

1. Hex Nuts with Set Screws on both ends of the Adjusting Screw are used to adjust all Seed Meters the same amount. See Figure 4-5. To adjust Seed Meters to be closed at "0A", loosen Hex Nuts with Set Screws (remove set screws first) and set adjusting screw to "0A". Slide Seedshaft to close all Seed Meters. Tighten Hex Nuts with Set Screws against Adjusting Screw and install set screws to lock against Seedshaft flats.

2. There are 4 sections of Seed Meters grouped together. On each end of each section there are 3/8 Square Bore Collars with Set Screws. Loosen Collar Set Screws to move that particular section as needed. See Figure 4-8.

![Figure 4-8: Seed Meter Section](image)

3. Individual Seed Meter Adapters with Seed Meter Cup attached or Seed Meter Cups (if Meter Adapter is not used) can be adjusted as required. Adjustments can be made by loosening the 1/4-20 x 3/4 Machine Screws that mount the Seed Meter Adapter or Seed Meter Cup to the Seedbox and the 1/4-20 Nut that attaches the Seed Meter Support to the Seed Meter Cup. Adjust the affected Seed Meters so the Feed Cut Off is against the star washer in the Seed Meter Cup (closed). Be sure the Meter Feed Roll stays engaged in the Seed Meter Star Washer. See Figure 4-9. After adjustments have been made seal the Seed Meter Adapter to Seedbox with clear Silicone.

![Figure 4-9: Individual Seed Meter Cup](image)
Servicing Seedshaft Assembly

**IMPORTANT**

The Clutch if equipped must be disengaged (power off) when Seed Shafts are turned manually.

If Seeder is not equipped with a Clutch, remove Chain from Speed Reducer to Transmission Shaft. This allows Seed Shaft to rotate independently from Front Roller. See Figure 3-14.

After you have serviced a Seedshaft, Seed Meters or related components you will need to Zero out the Seed Meters to ensure that you are seeding uniformly. Refer to Seed Meter Adjustment. The following is a list of things to be conscience of when re-assembling the Seedshafts.

- Ensure that the Thrust Washers are adjacent to Seed Meter Feed Cut Offs and Spacers or Square Bore Collars. See Figure 4-10.

**Figure 4-10: Seedshaft Assembly**

- Ensure RH Seedshaft is threaded into the Feed Roll Coupling Assembly between 1/2” to 3/4". Seedshaft should be visibly past the set screw hole when the set screw is removed from the Coupler. Tighten Feed Roll Coupler Assembly Set Screws against the flats of the Seed shaft.
- Ensure that the Seed shaft can turn freely without any binding when the Seed Meters are open or closed after servicing. You may need to make adjustments to the Seed Meter Supports at each Seed Meter.

LED Warning Lamps

When plugging in the LED 7 Pin Warning Lamp Connector:

1. Make sure the tractor has a good clean receptacle, free of dirt and corrosion.
2. Make sure the 7 Pin Connector is inserted ALL the way in. With tighter fitting pins, operator may think the Connector is all the way in, but really isn't.
3. Make sure the tractor receptacle cover latches over the keyway on the 7 Pin Connector to hold the Connector in place.

If an operator plugs in the 7 Pin Connector, but the lights Do not seem to work right, check the above items to make sure there is a good connection with the 7 Pin Connector.

**Figure 4-11: LED Warning Lamps**
Acre Meter Troubleshooting

**IMPORTANT**

Acre Meter is dust and splash resistant, under no circumstances should this unit be submerged in any conductive, corrosive, or flammable liquid. At no time use high pressure water or air to clean it, as this can damage the unit.

![Figure 4-12: Acre Meter](image)

**NOTE**

The ground wire is for static discharge protection and has no effect on the ability of the sensor to function properly under normal conditions.

The battery operated Acre Meter uses 3 AA batteries. The Acre Meter will display "LObat" when the batteries require replacement. Remove the Acre Meter from the implement and then the 4 Screws on the back of the case. Separate the housing from the rear plate. Replace with 3 quality AA batteries.

**Acre Meter does not count pulses during calibration or does not count acres during operation.**

1. Check the position of the Magnet Wheel Assembly and Pick-up Switch against the set-up instructions in this manual. **See Figure 2-11.**
2. Verify that the magnet in the Magnet Wheel Assembly has not come out.
3. Place the Acre Meter display in "Calibrate" mode by pressing the "*(FUNC)" key until the P-Word indicator is lit and then press the up/down arrow keys until the display shows 0 and the LED is blinking. Break the connection between the display and the Pick-up Switch and short between pins A and B on the display harness connector. You should see the display increment +1 with each contact of the connector terminals.

4. If step 3 works then wave a magnet in front of the Pick-up Switch face with it re-connected to the display and see if the display increments up. If not, put an ohm meter or continuity tester on the contacts of the Pick-up Switch harness and place a magnet in front of the Pick-up Switch face. The Pick-up Switch should show continuity or near 0 ohms resistance.

**Acre Meter can not change the width or pulse count settings or clear the field and total acres.**

1. Check to see if a password needs to be entered by pressing the "*(FUNC)" key until the P-Word indicator LED is lit. If "dIS" is displayed (password disabled) no password is set.
2. If "Ent" is displayed a password must be entered to change the settings or the password must be disabled as instructed in the setup section of this manual.

**Storage**

1. The service life of the Seeder will be extended by proper off-season storage practices. Prior to storing the unit, complete the following procedures:
   a. Completely clean the unit, blow all seed out of meters.
   b. Inspect the machine for worn or defective parts. Replace as needed.
   c. Repaint all areas where the original paint is worn off.
   d. Apply a light coating of oil or grease to exposed cylinder rods to prevent them from rusting.
   e. Lubricate each point of the machine as stated in “Lubrication Points and Intervals” on page 4-3.
   f. Reduce Rear Roller Air System Air Pressure to 15psi if stored for an extended period of time.
2. Store the unit in a shed or under a tarpaulin to protect it from the weather. The ground tools and tires should rest on boards, or some other object, to keep them out of the soil.
3. 3Pt Hitch Models, raise track removers, lower Parking Stands, and insert Parking Pin before unhitching from tractor.
4. Pull Type Models, raise the machine and install Transport Locks. Lower Drawbar Jack.
   a. Relieve Hydraulic Pressure in hoses after locks are installed.
   b. Block wheels before unhitching from tractor.
## General Reference and Specifications

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<tr>
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<th>SSP16</th>
<th>SS16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approximate Weight</strong></td>
<td>5,519 lbs. (2,503 kg)</td>
<td>6,757 lbs. (3,065 kg)</td>
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<tr>
<td><strong>Working Width</strong></td>
<td>16 ft. 0 in. (4.8 m)</td>
<td>16 ft. 0 in. (4.8 m)</td>
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<tr>
<td><strong>Transport Width</strong></td>
<td>18 ft. 2 in. (5.5 m)</td>
<td>18 ft. 2 in. (5.5 m)</td>
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<tr>
<td><strong>Transport Height</strong></td>
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<td>6 ft. 0 in. (1.8m)</td>
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<tr>
<td><strong>Transport Length</strong></td>
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<td>16 ft. 2 in. (4.9m)</td>
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<td><strong>Road Clearance</strong></td>
<td>Tractor Dependent</td>
<td>13 in. (330 mm)</td>
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<td><strong>Working Overall Height</strong></td>
<td>4 ft. 9 in. (1.4 m)</td>
<td>4 ft. 9 in. (1.4 m)</td>
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<td><strong>Working Overall Length</strong></td>
<td>5 ft. 11 in. (1.8 m)</td>
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<td><strong>Seed Box</strong></td>
<td>All Steel Construction with Cover</td>
<td>All Steel Construction with Cover</td>
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<td><strong>Seed Box Capacity (Micro-Meter)</strong></td>
<td>20 bu.</td>
<td>20 bu.</td>
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<tr>
<td><strong>Seed Meters</strong></td>
<td>&quot;Micro-Meter&quot;</td>
<td>&quot;Micro-Meter&quot;</td>
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<tr>
<td><strong>Seed Meter Drive</strong></td>
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<td>Ground Driven</td>
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<tr>
<td><strong>Seed Meter/Opening Spacing</strong></td>
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<td><strong>Seed Delivery</strong></td>
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<td>Broadcast with Wind Deflector Tray</td>
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<td><strong>Pulverizer Roller - Front</strong></td>
<td>15.75 in. (400 mm) Cast Iron</td>
<td>15.75 in. (400 mm) Cast Iron</td>
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<tr>
<td><strong>Pulverizer Roller - Rear</strong></td>
<td>11.5 in. (292 mm) Cast Iron</td>
<td>11.5 in. (292 mm) Cast Iron</td>
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<tr>
<td><strong>Pulverizer Axle Bearings</strong></td>
<td>1.75 in. (45 mm) Sealed Flange Bearing</td>
<td>1.75 in. (45 mm) Sealed Flange Bearing</td>
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<td><strong>Pulverizer Axle Size - Front</strong></td>
<td>12.75 in. (324 mm)</td>
<td>12.75 in. (324 mm)</td>
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<td><strong>Pulverizer Axle Size - Rear</strong></td>
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<td>8.625 in. (219 mm)</td>
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<td><strong>Hitch Type</strong></td>
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<td>Drawbar with Hydraulic Transport</td>
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<td>Free Link Cat. 2, 3</td>
<td>Cat. 2, 3</td>
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<td></td>
<td>Quick Hitch Coupler Cat. 2, 3N, 3</td>
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<td><strong>Tire Size</strong></td>
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<td><strong>S-Tine Wheel Track Remover</strong></td>
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<td><strong>Coil-Tine Wheel Track Remover</strong></td>
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<td><strong>Electronic Acre Meter</strong></td>
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<td><strong>Electric Clutch with Seed Shaft Sensor and Monitor</strong></td>
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<td><strong>Seedbox Scale System</strong></td>
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<tr>
<td><strong>Safety Warning Lights &amp; SMV Emblem</strong></td>
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<td><strong>Safety Chain Kit</strong></td>
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<td><strong>Powder Coat Paint, Red</strong></td>
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<td><strong>Horsepower Requirements</strong></td>
<td>6 to 8 HP (4.5 to 6 kW) per ft.</td>
<td>6 to 8 HP (4.5 to 6 kW) per ft.</td>
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<td><strong>Required Three-Point Hitch Lift Capacity</strong></td>
<td>6,719 lbs. (3,048 kg) Min</td>
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<td><strong>Recommended Operating Speed</strong></td>
<td>4.5 to 6.0 MPH (7.2 to 9.7 km/h)</td>
<td>4.5 to 6.0 MPH (7.2 to 9.7 km/h)</td>
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</table>

*Figure 5-1: Model Specifications*
GENERAL REFERENCE AND SPECIFICATIONS

Table provided for general use.

NOTES:
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<th>Date</th>
<th>Revision</th>
<th>Improvement(s) Description and Comments</th>
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<td>07/2019</td>
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<td>Initial Release</td>
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<tr>
<td>08/2020</td>
<td>ECN 46292</td>
<td>46292 - Reduce Seeder Width</td>
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